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ABSTRACT

This document presents the last newsletter of the Unified Science and Mathematics for Elementary Schools (USMES) project. Included is information relating to USMES materials which are available, research projects conducted with USMES materials, the use of USMES materials in the field, research reviewing the extension of USMES to the secondary level, and proposals still being processed. (SL)

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USMES NEWS

learning through real problem solving

Unified Sciences and Mathematics for Elementary Schools

Supported by grants from the National Science Foundation
edc/55 Chapel Street, Newton, MA 02160

September, 1977 Vol. III, No. 4

Dear Colleagues:

With development work ending this fall it is time to bring a phase of USMES to a close. This is the last newsletter of the USMES project in its present form, but you will hear news of USMES through other media in the near future. In 1977-1978 the USMES project will work on its final report and on the system for distributing USMES materials. EDC News will carry updates of information, and the eventual distribution procedure, to be worked out by this coming spring, will have its own communications of USMES activity. USMES is not ending; in fact, it is growing steadily and the immediate problems we face are increasing the rate of growth. The means of distribution being studied are being considered from the point of view of maximizing growth while providing quality materials and school system-wide staff development opportunities.

We are proud of the work done by teachers and specialists in curriculum and content, together with our central staff, in designing a new and important approach to learning and the classroom and administrative supports needed to make that approach effective. One of the research studies reported on below substantiates many of our beliefs in the effectiveness of the USMES approach. We are convinced that learning through investigation and action on real problems will have a permanent effect on education, although its dissemination may not be as rapid as we would like. It is particularly heartening that as the development of elementary school materials is ending, the development of real problem solving materials for secondary schools has begun.

We want to thank all of you for your interest in USMES, wish much success in its use and the further development and dissemination of real problem solving in education. All of us look forward to future contacts with you. For another year at least inquiries to USMES at EDC will be answered by one or another of the remaining USMES staff. Your USMES program will be kept in mind for future related activities. I can be personally contacted at any time in the future through the Center for Theoretical Physics, M.I.T., Cambridge, MA 02139.

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Sincerely,

Earle L. Lomon
USMES Project Director

What's Inside...

Information on materials available...on activities in the field...on secondary level rps...on proposals in the works...

SE 023 177

WHAT'S AVAILABLE

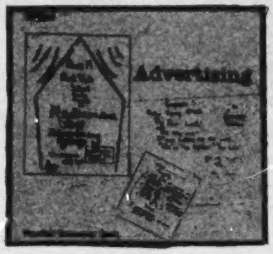
Completely revised versions of the USMES Guide and the Design Lab Manual have been produced and final trial editions of 18 Teacher Resource Books are currently available:

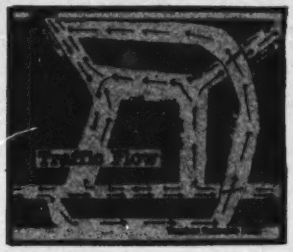
- Advertising
- Bicycle Transportation
- Classroom Design
- Consumer Research
- Describing People
- Designing for Human Proportions
- Eating in School
- Manufacturing
- Nature Trails
- Orientation
- Pedestrian Crossings
- Play Area Design and Use
- Protecting Property
- School Rules
- Soft Drink Design
- Traffic Flow
- Using Free Time
- Weather Predictions

The remaining eight titles are available in 1975 trial editions although four will probably be available in final form in August 1977.

New "How To's"

Work is proceeding on the revision of the "How To" Series and the cartoon set on electricity for primary grades is currently available; other beginning sets will be made available as they are finished (all should be ready in August 1977). New graphic versions of the Design Lab "How To" Series are also being produced and should be available in August. "How To" sets for intermediate grades are now being written or revised and should be available in the fall. The earlier versions of "How To" Cards (both regular and Design Lab) are still available.





LOOK for other USMES materials on... Pages 3, 9, 10, 12.

HOW TO
MAKE A HOME FOR YOUR ANIMAL
MY CATERPILLAR NEEDS A HOME.
SO DOES MY FISH.
AND MY SNAKE.
AND MY ANTS.
MY FROG TOO.
MAKE A HOME THAT HAS WHAT YOUR ANIMAL NEEDS.

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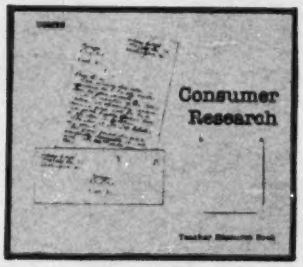
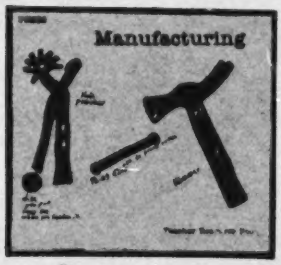
How to Get Them

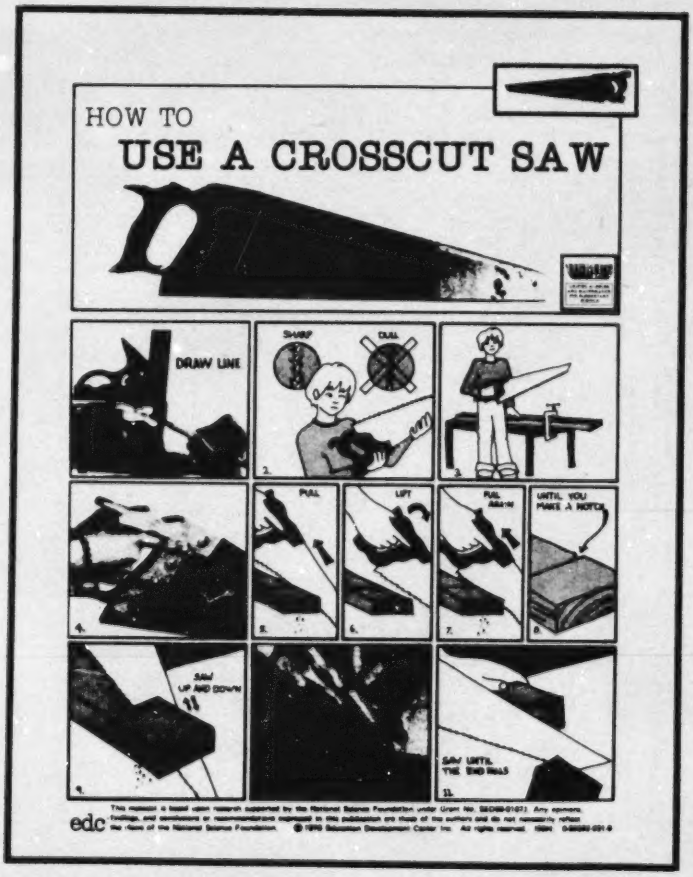
In August a revised Curriculum Correlation Guide containing math, science, social science, and language arts correlations will be available. In the fall a revised edition of Preparing People for USMES will be ready to facilitate the design of informational and teacher preparation workshops.

Technical reports on instruments to measure student problem-solving abilities and attitudes are also available in conjunction with the USMES Student Study report. The USMES Team Study report is also now completed.

The final trial editions of USMES materials will be available from EDC at cost until the long-term publication procedure is determined; at that time you will be notified of the new distribution methods. The National Science Foundation has encouraged us to explore publication and distribution plans which may best serve the educational public. Discussions are now underway with publishers and institutional distributors. These discussions are expected to proceed rapidly now that the final trial editions are being completed.







NEW RESEARCH ON USMES

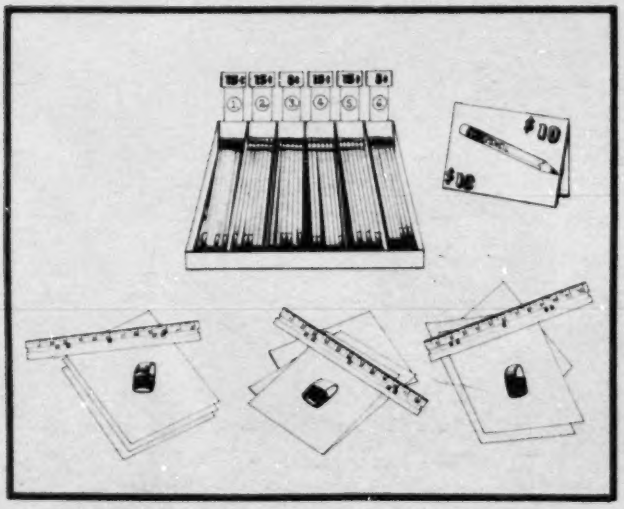
The USMES project conducted three studies in 1976-1977 to learn more about USMES students, schools, and resource teams. Reports on the Student Study and the Team Study have been produced; the School Study report will be available in late fall.

Student Study

The Student Study examined the impact of USMES on students' problem-solving abilities and attitudes. A major goal was to identify conditions affecting the program's impact, including the amount of USMES experience students received, their schools, grade levels, and scholastic achievement levels.

The general strategy was to develop instruments for assessing key problem-solving abilities and attitudes, then to administer the instruments in four carefully studied schools. The instruments were also designed to be suitable for diagnostic use in classrooms by teachers and administrators.

The Student Study report covers the major goals, methods, and findings of the research. It is accompanied by brief technical reports on the instruments and tables showing detailed findings. Only findings on a few key outcomes and casual factors are covered; because of serious time constraints, we have not attempted to reach final conclusions but rather to summarize our impressions about the major findings.



The Pencil Problem, a problem-solving instrument in the Student Study.

The differences among the schools were found to have a lot of effect; this is not surprising, particularly since the four were chosen for study because they were so different. Amount of USMES has a small positive effect--the group of students with a substantial amount of USMES experience did better than students with no USMES on all the outcomes we looked at. The group with only a small amount of USMES was more difficult to predict. The report invites readers to help interpret the findings.

Team Study

The Team Study examined the USMES resource team program and the factors that influenced how effective selected teams were in disseminating and implementing USMES in their areas.

The general strategy was to gather information on the goals, strategies, and activities of fifteen USMES resource teams throughout the nation. Information on file in correspondence and reports from previous years was supplemented with data from interviews and questionnaires administered during site visits in 1976-77 by USMES staff members. A questionnaire was also mailed to teachers trained by the teams.

The Team Study report begins with a discussion of the goals of the study, a description of the resource team program itself, and a summary of the methods used to gather information about the teams. Part Two consists of case studies of the fifteen teams, with emphasis on the factors influencing their growth and survival. Part Three discusses the major issues that emerge across teams. Part Four looks at how USMES is implemented by team-trained teachers. The Appendix includes copies of instruments used as well as more detailed information on the teams studied.

WHAT'S HAPPENING IN THE FIELD

Out West

Principal Al Yazzie reports that two new USMES teachers at Ganado (Arizona) Elementary School--Della Klassen and John Steinmetz--have been working on Growing Plants and Using Free Time. Barbara Braun did School Zoo with her first graders again this year. At Ganado Intermediate School, teachers commented, "Our Navajo students need a program like USMES to help give more meaning to school and learning. Books deal with problems foreign to students living on the Reservation." One class decided a school supply store was necessary since the Trading Posts don't always carry school supplies. Another class successfully completed an USMES Manufacturing unit to make money to buy playground equipment. One sixth grade class turned an unused, dirty janitor's closet into a Design Lab, complete with burglar alarm system.

Clarissa Begay, Marlene Tsosie, and Julia Bia fix up a Design Lab for their school.

An USMES Association in Los Angeles was formed in 1975 with members from all the areas in the L.A. Unified School District. USMES has been kept alive through workshops and informationals presented on a regular basis throughout the city.

Comprised of representatives from Campbell, Evergreen, and Berryessa Unified School Districts, the Archdiocese of San Francisco, and San Jose State University, the San Jose regional resource team has implemented USMES through informationals, workshops, and by the inclusion of USMES in college courses.

USMES is offered in graduate and extension courses at the University of California, Davis on an ongoing basis, according to Prof. Victor Perkes.

In August, Prof. Leland Webb of California State College, Bakersfield will be offering a seminar on USMES for a joint meeting of the Hawaii Council of Teachers of Mathematics and the California Mathematics Council on the island of Kauai.

Karen Yamamoto from Hawaii reports that USMES is used in four schools: two in the Honolulu School District, one in the Central School District, and one in the Leeward School District.

At Idaho State University, Pocatello, Prof. Jay Anderson is making plans to conduct an inservice course on problem-solving curricula using USMES as the model.

In Oregon, USMES is included in two courses at Portland State University--a graduate course on curriculum organization and an environmental education for teachers course, reports Prof. Michael Fiasca.

USMES was presented at an Earth Day Conference by Sharon Baker and the students from the Holladay Center for the Physically Handicapped, relates Tari Querin. The Conference itself was planned and implemented by the Student Environmental Action Model (STEAM) of Marshall High School in cooperation with the Environmental Center of Portland State University.

Prof. Ralph Stredwick says that at Eastern Washington State College, Cheney, USMES is presented in introductory courses for pre- and inservice teachers.

In Pullman, Washington, USMES is included in three courses at Washington State University.

At Heatherwood School in Boulder, Colorado, Kathy Schultz's fifth graders worked on improving the school. After surveying the entire school, they decided to make a permanent football field and to get more playground equipment. Biggest problem? Money!

Mid-Country

Together with the Chicago Board of Education, USMES has designed a Consumer Education project involving parents and merchants, as well as students and teachers. They will investigate consumer problems and attempt to improve the value received for their family earnings. While doing so they will be testing the value of a new form of interaction among parents, community, school and students.

USMES is included in undergraduate and graduate science education courses at Northern Illinois University, DeKalb, reports Prof. Alan Voelker. Alan also gave an USMES presentation at the Illinois Council of Teachers of Mathematics.

In Urbana, Illinois, eighteen classes at the Prairie School were involved in a schoolwide effort revolving around the Growing Plants and School Zoo challenges. The culminating activity will be a trip to the zoo, financed with the money raised from selling the plants they had grown. USMES is a major curriculum at Prairie, used in most classrooms each year.

USMES has expanded at McCombs Junior High School in Des Moines, Iowa, through a Teachers Incentive Grant, according to Sharon Castelda, and will be incorporated into the curriculum for the next academic year.

In Iowa City, Iowa, the new principal (Paul Davis) and the teachers of Horn School participated in the USMES study on effects of USMES on schools and students this year. USMES challenges presented this year were Play Area Design and Use and Mass Communications (Rose Mary Spaulding), Planning a Special Occasion and Advertising (Dorothy Wilkening), and Using Free Time (Kay Freeland and Sandy Phillips). Flo Duncan's class improved storage and lost and found areas in the hall and Dave Trunnell's students did advertising, ticket production and sales, writing, acting, directing, and staging to put on a play for parents and students.

Vista View School in Burnsville, Minnesota was also part of the USMES studies this year. Irene Lind, principal, and the teachers and students worked with USMES challenges: Growing Plants (Linda Anderson), Design Lab Design (Howard Cleveland), and School Zoo (Marion Twaites.)

USMES is listed in the Edina, Minnesota District Curriculum Guide (grades K-12) for science, mathematics, social studies, economic, and career education. All the elementary schools in the system have Design Labs and all interested teachers have been trained. Work has now begun implementing real problem solving on the secondary level.

The St. Paul, Minnesota team, expanded now to include junior high teachers who were trained last summer, has again conducted a six-week workshop this summer. The workshop is funded by a three-year grant from the Bush Foundation, which also provides funds for a full-time USMES coordinator.

USMES is included in a course called Trends in Theories of Instruction at Wichita State University, reports Prof. Joe Payne. The original Wichita resource team of seven has expanded to include representatives from each school that took part in summer training co-sponsored by Wichita Public Schools and Wichita State University.

Janowski School in Houston is permeated with the real problem solving spirit. Mira Baptiste, principal, and the teachers and kids have worked with the students on school related problems: fire safety (Doug Webb), traffic in school (Evelyn O'Neal), school spirit (Robert Whyte), producing a cookbook and designing and purchasing a school mat (Peggy Harris), and keeping bathrooms clean (Willie Cobbin). Work has also been done on Bicycle Transportation (Evelyn O'Neal) and Growing Plants (Barbara Sherman). Janowski was part of the USMES research studies this year.

From East Lansing, Michigan, Prof. Bill Fitzgerald and Prof. Janet Alleman-Brooks report that USMES is included in both math and social studies courses. Bill also presented USMES as part of a conference sponsored by the Institute for Research on Teaching, held in early May. Janet taught an off-campus course in Temperance, Michigan, in which USMES was included and has conducted workshops on USMES in Dansville, Grand Ledge, and Fenton, Michigan. This summer, Janet will include Ways to Learn/Teach, Finding Your Way, Consumer Research, and Orientation in a course "New Social Studies Curricula" being taught in Japan.

From Kent, Ohio, Prof. James Heddens reports that USMES is included in a graduate education course entitled Experimental Mathematics Programs.

Prof. Phil Makurat reports that USMES is included in several workshops and methods courses offered at the University of Wisconsin, Whitewater.

Down South

A six-week course on USMES was conducted last summer at Florida International University, Miami, for twenty-eight teachers, reports Prof. Ed McClintock. The class met three hours/week and worked on four USMES challenges. A workshop was held this spring for teachers at Pine Villa Elementary School. Ed and Paulette Martin will also be introducing USMES at Winston Park Elementary School.

Prof. David O'Neil reports that all undergraduate elementary education majors are introduced to USMES at Georgia State University, Atlanta. A graduate course dealing solely with USMES is also offered periodically.

Don Nelson presented USMES at an Education Exchange conducted in early May and sponsored by the Georgia State Department of Education. Attending were curriculum coordinators, principals, and teachers from surrounding rural communities, as well as Atlanta. Administrators are expected to choose one of the programs presented for implementation in their county.

Dr. Frusanna Booth, Department of Instruction, Clarke County, Georgia announced that a four-county USMES program for the gifted was being developed.

The Louisiana resource team members are all faculty at the Laboratory School of Southeastern University and have given USMES informationals and workshops to personnel from surrounding school districts (parishes)--Tangipahoa, St. Helena, St. Tammany, Washington, and East Baton Rouge.

This spring a ten-week workshop was conducted at South Forrest Attendance Center in Brooklyn, Mississippi. Principal A.T. Pearce and his teaching staff ran the workshop. The participants, who met weekly, are from South Forrest Central Elementary School, a school now becoming heavily involved in USMES.

Prof. Isadore Sonnier from the University of Southern Mississippi, Hattiesburg, reports that USMES is included in several science courses.

USMES is included in a course at Tennessee Tech in Cookeville, according to Prof. Richard K. Fletcher, Jr.

Westwood School in Memphis, Tennessee, the largest accredited elementary school in the Southeast region, immersed itself in USMES this year under the leadership of Ronnie Bynum. Nancy Beck's kindergarten students and Frances Messenger's first graders each did Growing Plants, Describing People, and Orientation; Laura Rouse also did Growing Plants, Opal Bowen did Describing People, and Linda Kindrick did Orientation. Other units undertaken this year were Weather Predictions (Jo Yancy and Rosa Coleman), Dice Design (Jo Yancy), Burglar Alarm Design (Opal Bowen), Advertising (Dorothy Johnson), and Consumer Research (Steve Wood). Charlene Heywood's class also worked on getting the school aware of metrics; Bob Banks' students did a TV survey, and three sixth grade classes (Johnson, Coleman, and Wood) worked together on an improving the school challenge. Westwood is another school included in this year's school and student studies.

Approximately 120 children at Hollymead School in Charlottesville, Virginia and 140 children at Weyers Cave School in Weyers Cave, Virginia have worked with USMES in such challenges as Classroom Design, Design Lab Design, Consumer Research, Classroom Management, Growing Plants, Ways to Learn/Teach, School Zoo, Play Area Design and Use, and Lunch Lines.

USMES is also included in two courses at the University of Virginia in Charlottesville, according to Prof. Joseph Kelly.

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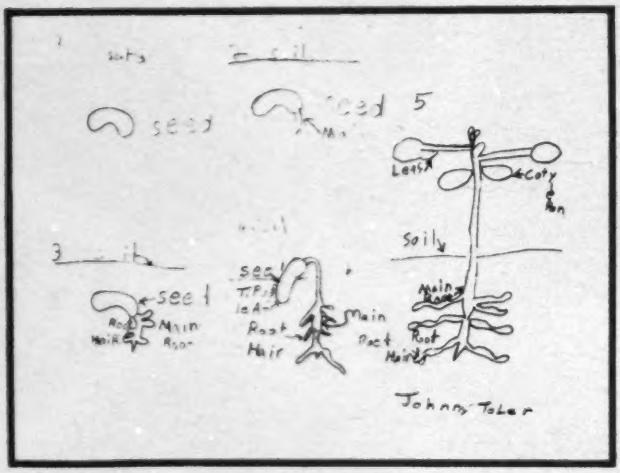
Prof. William Brown of Old Dominion University in Norfolk, Virginia, reports that USMES is included in three courses--two on science teaching and one on environmental education.

In Eastern Virginia, teachers in the Talented and Gifted (TAG) Program in Glen Allen, Virginia are using USMES with students from twelve school buildings who met at the Mathematics and Science Center. They did an extensive School Zoo unit that lasted the entire semester and then a Manufacturing/Advertising unit. This work has interested other TAG teachers, as well as classroom teachers in the districts, who are calling for workshops, sponsored by the Virginia State Department of Education through the Center with credit from University of Richmond.

USMES is included in two methods courses at the University of Richmond, according to Prof. Marianne Williams.



Up North

USMES is included in a course at the University of Massachusetts in Amherst, teaching mathematics in elementary schools, according to Prof. William Masalski.

USMES is officially listed as part of the science curriculum in Arlington, Massachusetts. Portable Design Labs are available to all eleven schools. A workshop on ESS, SCIS, and USMES will again be conducted this summer. Mike McCabe will become a part-time USMES coordinator next year.

Prof. Norman Dee of Lesley College in Cambridge, Massachusetts reports that students in his USMES course spend the first four weeks at Lesley and then have a field placement to work in the classroom with USMES materials. Mike McCabe of Arlington and USMES staff member Charlie Donahoe will be teaching a graduate course on USMES and open education at Lesley next year.

In Watertown, Massachusetts, USMES continues to be used at the Hosmer School. Teachers Marie Salah and Beth McGrail offered the Getting In Shape challenge; Marie's class did Burglar Alarm Design as well.

USMES is included in an undergraduate course, Mathematics Education K-6, at the University of New Hampshire in Durham, according to Prof. Richard Balomenos.

USMES implementation in New Jersey is carried out through the Technology for Children (T4C) Program and the state's Education Improvement Centers. Wesley Perusek, Associate Director of T4C, working with Dianne Edwards, Barbara Briggs, and Marcia Mertens coordinated a state-funded pilot program in 1976, including a two-week workshop for thirty teachers representing twenty school districts. Three resource teams were established statewide, the most active one representing northwest New Jersey. Chaired by Mario Barbiere, vice principal of Haskell School, its members are Carol Andrews, Catherine Deininger, Ruth Felman, Dorothy Podsiadlo, and Susan Kennedy. Through their efforts, numerous informational meetings and a two-day workshop have disseminated USMES to thirty-five additional school districts. The team is conducting a two-week USMES teacher-training workshop this summer. In Plainfield, Barbara Briggs shared her experiences with USMES at a district-wide May workshop she chaired and Dianne Edwards is coordinating the Gifted/Talented Pilot Program, using USMES as the core curriculum.

Principals, teachers, and math coordinators from Districts 4, 12, 22, 26, and 31 in New York City, as well as representatives from the Center for Mathematics and Science, Center for the Humanities and the Arts, Hunter College, and Queens College all have played a role in the implementation of USMES in the city. A great deal of time, effort, and local funds have gone into several inservice workshops, informationals, and courses.

Prof. William Ritz reports that USMES is included in a course on science teaching at middle and junior high levels at

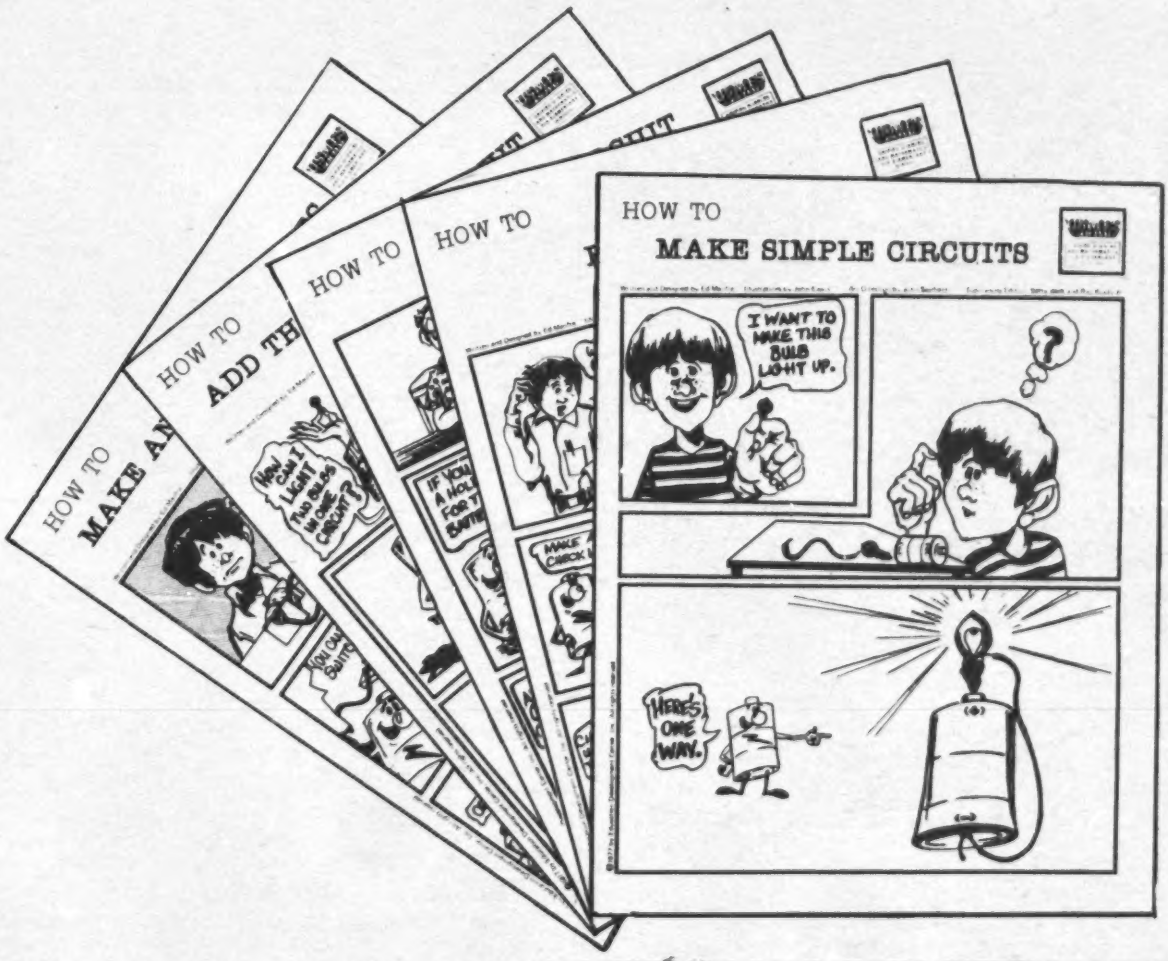
(continued on page 9)

Syracuse University in New York. Prof. Frank Broadbert, also of Syracuse University, reports that an introduction to USMES is also included in courses offered to graduates and undergraduates in elementary school mathematics.

Ben Werner reports that forty to fifty teachers in the Three Village School District on Long Island are using USMES. Fifteen of the USMES units are listed in the district science curriculum program, along with ESS and SCIS.

All the classes at Merion School in Merion, Pennsylvania were involved in a challenge to make recess more enjoyable. Class representatives on an USMES council facilitated implementing the all-school challenge, which was later expanded to deal with lunchroom problems as well.

Teachers Sandra Every and Rene Rubin received funding to conduct a four-day workshop dealing with skills in multi-age groupings. USMES played a major part in the whole workshop and one full day was devoted to problem solving.



RPS GOES TO HIGH SCHOOL

Spring Program

The nearly completed USMES project has shown that elementary students can learn basic skills and processes from all the disciplines by investigating and acting on real problems like unsafe intersections and crowded lunchrooms. This spring and summer a pilot program funded by the Rockefeller Family Fund and the Sloan Foundation has been underway to see how the same basic approach works in secondary schools. Ideas for classroom work evolved from a three-day planning workshop held in March.

This spring, teachers from junior and senior high schools in Boston and Arlington, Massachusetts, St. Paul and Edina, Minnesota, and Collierville, Tennessee, had their students involved in solving problems in consumerism, security, rules and management in the classroom and school, environmental issues, and improving school facilities. The sixteen teachers reported on their students' interest and on the educational effectiveness of the problem-solving activities; they also administered several evaluation instruments. During the spring, the project director visited the teachers and administrators to review work in progress and to discuss the types of supportive materials that should be developed.

The pilot program grew in part from the USMES project experience. Many educators, including ones from school systems using USMES, felt that real problem solving could improve the attitudes of high school students, while helping the students learn basic and process skills in math, science, social science, and language arts.

Summer Workshop

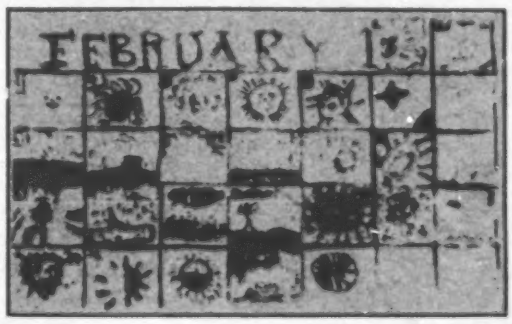
During July 26 - August 2, a workshop for 40 teachers new to real problem solving was held at Salem State College. These teachers came from Chicago, and Portland and Tigard, Oregon, as well as from the above-mentioned communities. They will be prepared to help in further development of real problem solving materials.

South Boston High Program

South Boston High School, which is now the home of Gerry Kozberg (Gerry helped get USMES started in St. Paul), asked USMES central staff to assist in providing some of its teachers with a knowledge of real problem solving. Salem State College has also agreed to collaborate with South Boston and will provide help in setting up a curriculum around real problem solving that can lead to masters degrees for the participating teachers. Five "Southie" teachers are now in the secondary development program. Twelve additional teachers also attended this summer's workshop. Follow-up discussions, seminars and courses will be held during the 1977-78 academic year on the South Boston High and Salem State College campuses.

The Project Director for Real Problem Solving in Secondary Education is Earle Lomon; the Associate Director is Betty Beck. An extension of this project has been proposed; word is expected in early fall on the outcome.

USMES



Weather Predictions

Teacher Resource Book

PROPOSALS IN THE WORKS

A "MAJESTIC" CONFERENCE

The new innovative curricula have been implemented in tens of thousands of classrooms since their large scale introduction in the early 1960's. Many individual schools have successfully used the innovative approaches to complement the best aspects of their traditional curricula. Many other schools stuck by the traditional curricula. These last have often dropped the use of newer materials in a "back to basics" move.

In retrospect such mixed results were inevitable without careful consideration of the strengths and weaknesses of different curricula and learning modes (traditional and innovative) and how their approaches may best be combined into a well-rounded, strong educational program. Members of the USMES staff together with a group of citizens and educators throughout the country have been planning a conference to address these issues. (The subject is so large and important that one of the planners dubbed it "The Majestic Conference"!) Funding has been requested and it is hoped that a grant will be made this September to enable the conference to be held in January 1978. A full report of the conference will be published.

TV EXPERIMENT

The Interactive Interclassroom Television proposal, which has been sent to the National Science Foundation, is an experiment to see whether an action-oriented curriculum such as USMES can be learned through an interactive mode. The experiment, in which the Memphis School System is collaborating, would use experienced USMES classes at the Westwood School in Memphis as the broadcasting class. Their work on USMES would be broadcast to other participating schools unfamiliar with USMES. The students in the non-USMES classes would have telephones and would be able to talk directly with the children in the USMES class. In addition to USMES, at least one other action-oriented curriculum would be involved in the experiment. If the experiment proves a success, a model would be developed and tested that could be used by other school districts with television capability.

USMES FILM SERIES

The USMES teacher training film series would undoubtedly be something that all members of the USMES network who are involved in training teachers in the use of USMES would like to have available. The film series would make it possible to provide new teachers actual scenes of USMES classes in action, interviews with experienced USMES teachers, discussions on the key elements of USMES, and techniques for teaching skills. At the current time funding for such a series has not been obtained, but we still hope to have an USMES film series available in the future.

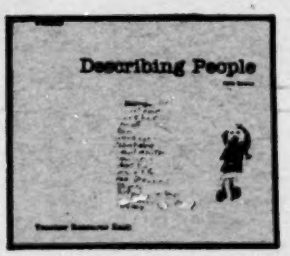
RPS IN PRINT

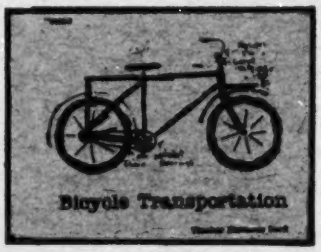
The May 1977 issue of *Social Education* had a special section on real problem solving edited by Arthur Ellis of University of Minnesota and Frank Ryan of the University of California, Riverside. The articles are of interest to all educators, but especially to those involved in social studies. Although specialized in its scope this special section indicates the interest and effectiveness that a journal on real problem solving may have for the educational community.

This fall the School Science and Math Association will publish such a journal as a special issue of *School Science and Mathematics*. Edited by John Niman of Hunter College and containing articles prepared by scholars in several fields and by classroom teachers on many aspects of real problem solving education, this promises to be an exciting publication. Its success will determine if attempts are to be made to publish a journal of real problem solving on a regular basis.

SPREADING THE WORD

Great ways that you can personally help keep USMES in the public eye are through meetings and publications. National publications like *Learning* are important, as are national meetings like those of NSTA, NCTM, and NCSS. Local publications and state, city, district, or local educational meetings may be even more important. Through publications and meetings, new teachers, administrators, and many others hear about USMES and seek additional information or training. Thanks to the help of many of you, both these forms of communication have informed educators about USMES. The names of those who have helped in this way would be too numerous to mention but we hope that as many of you as possible will help contribute to spreading information on USMES. Please report your USMES activities in local or state magazines, newsletters or meetings. Responses to you may initiate new collaborations on a regional basis. We would appreciate copies of articles or programs.





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